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SIX WEEKS IN SOUTHERN MINDANAO.

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A THREE days' voyage from Puer to Princessa, in the island of Paraqua, by way of Balabac and Sooloo, brought us to the port of Zamboanga, in the southwest part of Mindanao. The harbor is of but little value. It is partly sheltered on the south by the low island of Santa Cruz opposite, but is open to the storms from the southeast. There had been a heavy blow from this direction before we arrived, and a high sea was running; but toward night we got our baggage into a huge dug-out, and were paddled ashore. After some trouble with the customs' officers over our baggage, we were finally, after dark, domiciled in a shaky old fonda, the only hotel the place affords, a liquor and tobacco shop and place for the sale of postage stamps and lottery tickets below, and a lodging place above. We got a promising view the next morning from our window into a yard below, where a dozen pairs of immense bivalve shells (*Tridacna gigas*) lay in the sun. A careful measurement of the largest pair showed three feet and five inches in length and two feet and five inches across the valves. They must have weighed toward two hundred pounds each, or four hundred pounds for a single shell. We found a single valve made a good load for two men. The Spanish naval officers, who seem, like other sea-faring people, to be given to telling large yarns, tell of one off the south coast of Mindanao which has long been noted for its great size, and that the officers of the steam frigate *Salamanca* once planned to take it home as a present to

Queen Isabella. They steamed down the coast until they found the shell, dropped their strongest hawser around it and put on all steam, but after some time found that instead of raising the shell the steamer was gradually sinking, being drawn under by the immense weight. So they cut the hawser and left the shell in its bed, where they declare it may yet be seen. The smaller species are found in the mud at low tide. Their toothed valves lie gaping apart, and must be traps ready set for any inquisitive monkey who may pass their way. The larger ones are found in deeper water, and there are stories of divers after pearl oysters being caught in their immense jaws and held to their death.

Zamboanga is a town of six or eight thousand inhabitants, nearly all Indian, but of mixed tribes, it having been a convict colony a generation ago, formed from the various islands of the group. The Spanish residents, twenty-five or thirty in number, are gathered with the principal Chinese merchants, at the south end of the town, near the old stone fort and the church. The native town reaches down the coast to the north for a mile and a half, but is concealed in an immense grove of the finest coco palms. The houses are of the ordinary Philippine type, — great baskets of nipa palm leaves, mounted on poles, eight or ten feet above ground. In front of a part of the native town is a village of Moros, Mohammedan natives, who may be the original inhabitants of the place. Their houses are of the same form as those of the Christians, but are poorer, and many of them built over the water, in true Malay style. These people seem to pretty nearly monopolize the business of boat-making and fishing for the town, leaving the Christians to cultivate the soil.

Behind the city is a level country extending for three or four miles to the foot of the hills. Much of it is overflowed and planted to rice. The hills themselves showed patches of sugar cane and other crops, whose cultivation was crawling up their sides, but above and beyond all was still unbroken forest.

We made daily visits to the market, and found the Moro men, marked by their red turbans and tight-fitting drawers, busy selling fish, while their wives were squatted on the ground with little piles — one for a cent — of shell fish spread out before them. Among these were several species of spider shells in abundance, some fine cones and cowries, and great numbers of several species

of bivalves; among them tree oysters, with fresh pieces of mangrove bark sticking to the valves, where they had chopped them loose with their knives.

The woods being too far away to make general collecting easy from the city, after two or three days' stay we embarked in a native outrigger boat, and after three hours of voyage were landed on the grand beach of Ayala, a little town fifteen miles from Zamboango to the north, where I had collected twelve years before. There being no house fitted for our use, we occupied with the officials of the place the tribunal, a large building near the church, and serving for jail, court-house, town-house, and lodging-place for strangers. Coming up to the back side of the town and tribunal were the level rice fields, now flooded with water and just planted or being planted to rice. The woods had been cut back a good deal in the last few years, but we found the rice fields swarming with water birds, and concluded to stop for some weeks. The first trip to the fields produced eight or ten species of waders, and many more followed; sandpipes, snipes, plovers, rails and herons, all in great variety. Many of them were no doubt migrants from the northwest, but several were breeding, and no doubt residents. The population of the place seemed to be hunters by instinct, and as soon as they found that they could get grandes (the big old Spanish copper cents which makes the small change of the islands) for living things, we were besieged by an array of helpers, big and little. Morning, noon and night they were at our door, with shells, turtles, snakes, lizards, birds, and everything else they thought might tempt the coppers out of our pockets. The boys set snares for the birds about the flowers of the trees, and scoured the woods and fields with their bamboo blow guns, and brought in sun birds, forest thrushes, orioles, tailor birds, cuckoos, and even a number of small owls caught napping in the groves of second growth. Several old contraband guns were brought out, and with powder and shot advanced by us, some of the older hunters brought from the woods, back loads of great hornbills, forest pigeons and jungle fowl, with now and then a big-footed mound-builder bird. One little old man, skilled in woodcraft, set a large number of lassoes on the ground, and made us daily visits with his game. The most abundant ground inhabiting mammal seemed to be a large spotted civet cat. One day he brought three of these, and

then a black long-tailed animal as large as a cat, and of the weasel family. After these he brought us jungle fowl, colored like Spanish game fowls, and a few of the large ground pigeons, with a bloody spot in the white breast, called by the Spanish pemhalada, stabbed with a knife. Whenever we could find time from our work of preparing the material purchased we made visits to the forest, and added many species not found by the native hunters.

Two hollow trees inhabited by *Galeopithecus* were found and chopped down, and from one of these eight were captured and there were others which escaped. They were old females, and young in all stages of growth, so that they would appear to breed the year round. We kept several of them living for some time, and had a chance to observe their habits. One specimen of the curious little *Tarsius* was brought in. It is probably not rare here, but from its nocturnal habits not readily found. The common monkey, *Cynomolgus*, was very abundant and tame. We got two species of squirrel, the little *Sciurus philippinensis*, of a dark brown color, not larger than a mouse, but a true tree squirrel, with large bushy tail. Besides this we found a larger red brown one, which does not seem to be described. Besides those mammals mentioned we got a rat and a large shrew, making nine besides the bats. Deer and wild pigs were plenty, but we got none during our stay. Two crocodiles six and a half feet long but apparently adult, were brought in living, tied hand and foot, and were tied to a post in the open space beneath the tribunal. A large monitor, different in species from the Paraqua ones, was abundant, as was also a plant-eating lizard, of about the same size, four or five feet in length, and called by the natives ibit. It is called good food, like the plant-eating iguanos of South America.

Among the lizards was a flying one, *Draco*, abundant on the coco trees, and differing in size and color from those observed in Paraqua. On opening the wing membranes one could not help noticing a likeness to a butterfly, both in shape of wings and in the coloring of nulatix blue with red spots. This case of resemblance must be added to the long list of cases of protective coloring. This peculiar coloring may aid the lizard both in escaping its enemies, the hawks, and in capturing its own food of insects. One evening one of our hunters came dragging in a python over twelve feet long and as thick as a man's arm, which he

had met and shot in the path, and three snakes were brought in of several species, some of them venomous. Among birds we procured three species of horn-bills, all different from those of Paraqua. Among them the great double-crested one, over a yard in length. These were found feeding in the wild fig trees at a height of one hundred and fifty to two hundred feet from the ground, and it tried all the shooting qualities of our guns to bring them down. They made the woods ring with their harsh cries of *ca-la-o*, from whence they got their native name. We found seven species of kingfishers, among them one apparently unnamed, and the rare spotted *hombroni*. We also found the species of broad-bill *Eurylaimus*, supposed to be confined to Basilan. It inhabits different heights in the two islands, and a more extended search may prove that the fauna of the two islands does not differ as much as has been supposed. Hawks were abundant and varied, and we procured some nine or ten species varying in size from the great sea eagle, closely allied to our bald headed eagle, and a fish hawk equalling it in size, to the little black hawk with white breast, *Microhierax*. It is about six inches in length, and one of the smallest of its tribe. The rice fields and adjacent swamps produced six species of rails and eight of herons, with a multitude of other waders.

After three weeks of hard work, interrupted by a few days of fever with two of the party, we returned to Zamboanga with a collection of seven hundred specimens of birds, of some one hundred and fifty species, fifty mammals, seventy-five reptiles, and a few fish and amphibians.

After a visit to the island of Basilan we returned to Zamboanga and went north again, this time to a little bay called El Recodo, or La Culdera, about twelve miles from the city. We had heard that corals were abundant here, and were not disappointed. A gap between the hills into which the sea entered, and then a long, low sand bar running out from one side and bending around, formed a quiet little bay, with deep water in the centre shoaling on every side. Two or three hundred Moros had built low, tumble-down houses along the inner side of the sand bar and over the water, while two or three Chinamen, who had followed them for purposes of trade, had built homes on the inner side of the bay on the Aquala road. After getting settled in one of these houses, we

took boats and paddled over to the bay. The water was very clear, and we could see plainly to a depth of twelve or fifteen feet. Most of the corals seem to grow above this depth, and most of the species here were within a few feet of the surface, and many of them exposed for some time at each tide. The quiet waters seemed to be especially fitted for the more delicate species of Madreporas, Pavonias and Stylasters. Many of these would break of their own weight on being taken from the water. Scattered among the stems of the branching forms were a large number of species of Fungias. Near the shore were whole reefs of most delicate Madreporas and milleporas, which would break by dozens at each step as we waded over them, but the broken branches kept on growing, attached themselves to their neighbors, and the reef would be firmer than ever. As soon as the Moros found that we would pay for sea stones, they showed a greater desire for grandes than even the natives of Ayala had done, and there were soon a dozen boats over the bay coral fishing, while the women and girls were wading the reefs to find something that would suit our taste. In this way we got many species which would have escaped us. Even the chief of the village got out his boat, and diving down into about thirty feet of water, brought up specimens of a tree-like *Oculina*, with stems as thick as the wrist, and very heavy and jet black. He complained of a headache, but on being well paid tried it again next day. We bought and collected corals by the boat-load and spread them upon the sand point to dry and bleach in the sun until we had a ship-load, when we set to work to classify and select such as we could pack. We roughly estimated the species procured at this place at a hundred. Among the novelties was a curious little *Fungia* not larger than an old copper cent, but with the curious faculty of readily breaking into pieces, when each part would build itself into a disk again. Every storm would serve to multiply them. We found the packing a much greater job than collecting, but the villagers turned in and tore up coconut husks, and this, with rice chaff, furnished packing material of good quality. After two weeks of collecting, studying and packing we returned to Zamboanga and took the next steamer for the Central Philippines.